We claim:

1. An air interface processor for a modem, comprising:

an event scheduling unit for scheduling the processing, by at least one data processing unit in the modem, of data to be transmitted by the modem; and

a control unit for receiving instructions from the event scheduling unit and determining commands to send to the at least one data processing unit.

2. An air interface processor of claim 1 wherein the at least one data processing unit is a frame formatter.

3. An air interface processor of claim 2 wherein the at least one data processing unit further comprises a forward error correction unit.

4. An air interface processor of claim 1 wherein the control unit is a microsequencer.

5. An air interface processor of claim 1 wherein the event scheduling unit is programmable.

6. An air interface processor of claim 1 wherein the control unit is programmable.

7. An air interface processor of claim 2 wherein the frame formatter is configurable.

8. An air interface processor for a modem, comprising:

an event scheduling unit for scheduling the processing, by at least one data processing unit in the modem, of data received by the modem; and

a control unit for receiving instructions from the event scheduling unit and determining commands to send to the at least one data processing unit.

9. An air interface processor of claim 8 wherein the at least one data processing unit is a frame deformatter.

10. An air interface processor of claim 8 wherein the at least one data processing unit further comprises a forward error correction unit.

11. An air interface processor of claim 8 wherein the control unit is a microsequencer.

12. An air interface processor of claim 8 wherein the event scheduling unit is programmable.

13. An air interface processor of claim 8 wherein the control unit is programmable.

14. An air interface processor of claim 9 wherein the frame deformatter is configurable.

15. A method of processing data in a modem, comprising:

scheduling the processing of data for transmission by the modem;

transmitting the schedule to a microsequencer; and

sending commands to a frame formatter to build a frame of data in accordance with a program of the microsequencer.

16. A method of processing data in a modem, comprising:

scheduling the processing of data reception by the modem;

transmitting the schedule to a microsequencer; and

sending commands to a frame deformatter to extract data from a frame of data in accordance with a program of the microsequencer.

17. In a modem having configurable means for converting data into formatted data packages and programmable control means for controlling the configurable data conversion means, a method

of controlling the conversion of data comprising:

configuring the configurable data conversion means in accordance with at least one communication standard;

selecting one of the at least one communication standards; and

programming the programmable control means in accordance with the selected communication standard to control the configurable data conversion means.

18. The method of claim 17 further comprising the step of using the programmed control means to determine a communication time schedule.

19. The method of claim 17 further comprising the step of using the programmed control means to control the configured data conversion means.

20. In a modem having configurable means for extraction of data from formatted data packages and programmable control means for controlling the configurable data extraction means, a method of controlling the extraction of data comprising:

configuring the configurable data extraction means in accordance with at least one communication standard;

selecting one of the at least one communication standards; and

programming the programmable control means in accordance with the selected communication standard to control the configurable data extraction means.

21. The method of claim 20 further comprising the step of using the programmed control means to determine a communication time schedule.

22. The method of claim 20 further comprising the step of using the programmed control means to control the configured data extraction means.

23. A method of programming a microsequencer to perform a multi-way branching instruction comprising:

(a) establishing a lookup table having entries indexed by n conditions and each entry having a lookup value;

(b) defining a function of the n conditions based on the lookup table; and

(c) determining, based on the function, the next program instruction to execute.

24. The method of claim 23, wherein step (c) comprises the step of determining, based on the function, an offset for determining the next program instruction to execute.

25. The method of claim 24, wherein step (b) comprises defining a boolean function of the n conditions based on the lookup table.

26. A method of programming a microsequencer to perform a multi-way branching instruction based on m sets of n conditions, the method comprising:

(a) establishing m lookup tables, each table having entries indexed by the n conditions of one of the m sets of n conditions, and each entry of each table having a lookup value;

(b) defining m functions, each function based on one of the m lookup tables; and

(c) determining, based on the m functions, the next program instruction to execute.

27. The method of claim 26 wherein step (b) comprises the step of defining m boolean functions, each boolean function based on one of the m lookup tables.

28. The method of claim 27, wherein step (c) comprises the step of interpreting the m boolean functions as a binary value to determine an offset for determining the next program instruction to execute.

29. The method of claim 26, wherein at least one of the m functions can be configured by setting the lookup values of the entries in the corresponding lookup table.

30. An apparatus for performing a multi-way branching instruction by a microsequencer based on m sets of n conditions, the apparatus comprising:

memory means storing m lookup tables, each table having entries indexed by the n conditions of one of the m sets of n conditions, and each entry of each table having a lookup value;

hardware means defining m functions, each function based on one of the m lookup tables; and

software means for determining, based on the m function, the next program instruction to execute.

31. The apparatus of claim 30, wherein at least one of the m functions can be configured by setting the lookup values of each entry of the corresponding lookup table.

32. The apparatus of claim 30, wherein the hardware means comprises m multiplexers.

33. A method of programming a microprocessor to perform a multi-way branching instruction based on m sets of n conditions, the method comprising:

(a) establishing m lookup tables, each table having entries indexed by the n conditions of one of the m sets of n conditions, and each entry of each table having a lookup value;

(b) defining m functions, each function based on one of the m lookup tables; and

(c) determining, based on the m functions, the next program instruction to execute.

34. An modem comprising:

a modulator; and

an air interface processor for the modulator,

the air interface processor having an event scheduling unit for scheduling the processing, by at least one data processing unit in the modem, of data to be transmitted by the modem and a control unit for receiving instructions from the event scheduling unit and determining commands to send to the at least one data processing unit.

35. An modem comprising:

a demodulator; and

an air interface processor for the demodulator,

the air interface processor having an event scheduling unit for scheduling the processing, by at least one data processing unit in the modem, of data received by the modem and a control unit for receiving instructions from the event scheduling unit and determining commands to send to the at least one data processing unit.